Dansk Selskab for
Patientsikkerhed

Medication names and medication errors

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Do we have a problem with names?

UK

- **Prograf- Advagraf – both tacrolimus Advagraf is a prolonged release formulation. Serious harm**

US

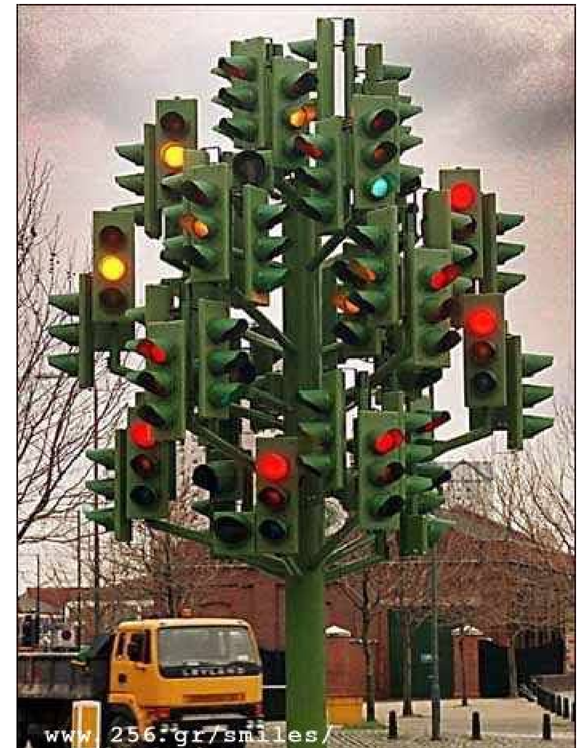
- **Lasix- Losec – withdrawal of name in US**

DK

- **Plendil – Panodil , 3 admissions in one patient**
- **Imurel- Truxal (hand writing), admission**

Generic names

- **Venorelbine – vinblastin (Velbe) wrong chemotherapy – stopped by parent!**



Data from error reporting systems

- **Cohen M et al, ISMP: Up to 25% of medication errors are related to names and packaging**
- **Hellebek A et al, DK 7% of reported medication errors in a hospital setting related to names and packaging. The majority were label/package mix ups**
- **Lists: www.ismp.org**
- **Classifying name errors**
  - Type of mix up of name pairs: Look-a-like / Sound-a-like
  - Type of names: Generic names / brand names
  - Part of name involved in error: Qualifiers / numbers/ abbreviations

What do we know about likelyhood of confusion 1

- **Occupied clusters – some letter combination are more popular than others- dilemma with strong generic stems (vin- , check the lists)**
- **Differences in middle and similarity in beginning and end is a problem (Plendil- Panodil)**
- **Long names with qualifiers are (somehow) lost in the prescribing process**
- **Qualifiers for retard/protracted/rapid onset are many – and misinterpreted**
- **Confounder- ”cognitive errors” (Bruce Lambert et al Drug Safety 2005)**
  - Common names are easier to identify
  - Rare names are easier misinterpreted as common names

Likelihood of confusion 2

- Names ending with an ”l”
- Numbers as part of the name: NovoMix 30
- Names and strenghts parted by ”/” – may imply concentration

- Abbreviations both in invented name – and invented by staff

Likelyhood of confusion 3
Expression of strength is a hot topic!

- **Confusion between concentration pr ml and whole bottle content**
  - Particularly with differences between central procedure and national procedures

- **Confusion in what the strength relates to – the salt or the active substance (Halaven eribulin base or eribulin mesylate)**
  - ”Each 2 ml vial contains 0,88 mg of eribulin (equvalent to 1 mg of eribulin mesylate)”
  - In EU but not globally strength relates to the active substance

- **Use of ”international units” as strength**
  - The abbreviation IU creates errors in handwriting

hand writing

Insulin 6 I.E./ insulin 61. l./ insulin 61. e.

Stig Ejdrup Andersen og Annemarie Hellebek 2003

Low hanging fruits
How to reduce confusion

Label and pick lists

- **Intermediate tall man lettering results in fewer errors**
  Filik R et al Social Science& Medicine 2004
  Implemented for sudden generic names in Australia, US and Denmark

- **Use small letters –capitals only intermediate**
- **Use space around the name on the label**
- **Use a font which is designed for easiness to read on labels**
  E-TYPES Medilabel 2007

Documentation systems

- **Improve design of electronic prescribing systems including computer pick lists**
  - Hot topic in human factor research
- **Prohibit hand writing or Train doctors/pharmacists/nurses and even patients in hand writing**
  - A patient safety officer´s comment

VinBLAstin
Velbe
Vinflunin
til i.v. anvendelse
Paclitaxel
Vindesine
Eldesine
Vinkristin
Vinorelbine

Make it easy for staff to do the right thing

YES! IT'S A WOMAN!!!

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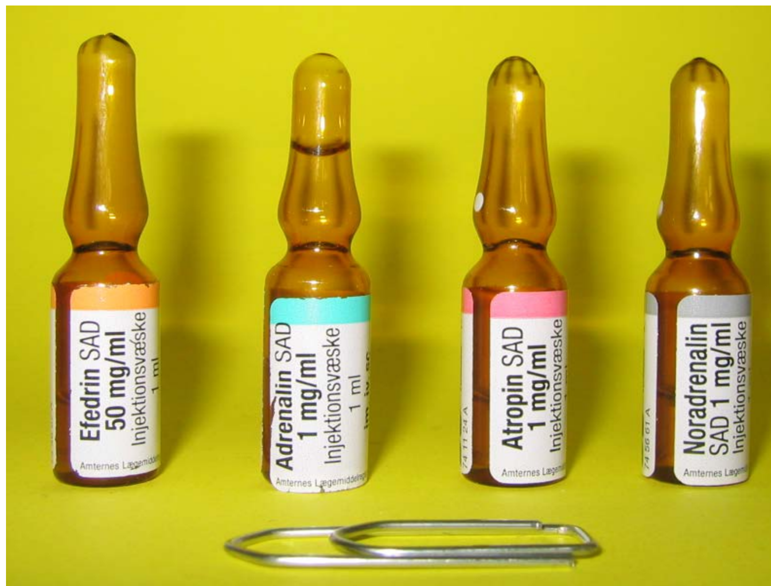
Efedrin SAD
50 mg/ml
Injektionsvæske
1 ml
Adrenalin SAD
1 mg/ml
Injektionsvæske
1 ml
Atropin SAD
1 mg/ml
Injektionsvæske
Noradrenalin
SAD 1 mg/ml
Injektionsvæske

ATROPIN SAD
1 mg/ml
Injektionsvæske
NORADRENALIN
SAD 1 mg/ml
EFEDRIN SAD
50 mg/ml
ADRENALIN
SAD 1 mg/ml

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NRG methods

Case by case evaluation of risk for public health in pre-identified ”risky name- pairs”

NRG guideline

- **Risk of mix up - Names do not stand alone**
  - Strength, dosage form, administration times, route, indication, patient population, legal status
  - Likelihood that the two names at any time could be ”stored” together
  - Challenge: Different systems for storage, ordering and dispensing in EU

- **Risk of harm**
  - Luckily not all mix ups cause harm – one dose of a drug in normal dose to a patient is generally not dangerous
  - Harm is more likely to occur in high risk/high alert medications

- **Orphan drugs**
  - Risk of cognitive errors- versus specialised setting

- **Potential new pharmaceutical forms and/or routes of administration**

NRG recommends

- Avoid qualifiers consisting of a single letter or number(s) (Arabic and Roman)
  - **Confusion with the strength and/or posology of the medicinal product.**

- Avoid insert the whole invented name of the individual active substance(s) in the proposed invented name for the fixed combination
  - **Confusion between combination and single product**

How to prepare

- **Database searches for potential mix ups of name candidates**
  - Is a good idea
  - Can be done automatically – it may work for industry – it did not work for NRG group

- **Evaluation of risk of confusion and risk of harm for potiential ”problem pairs”**
  - Systematic evaluation case by case
  - Proactive analyses by MAH are presently not required. May be the way forward

Conclusion

- **Name confusions are frequent among medication errors**
- **Name confusions occur for many reasons**
- **Some lowhanging fruits**
- **Need for global consensus**

- **NRG group reviews all new proposals for invented names**
  - risk of confusion, risk of harm and risk of cognitive errors are addressed
  - Applicant´s standardized proactive analysis may be a way forward

- **NRG welcomes feed back**